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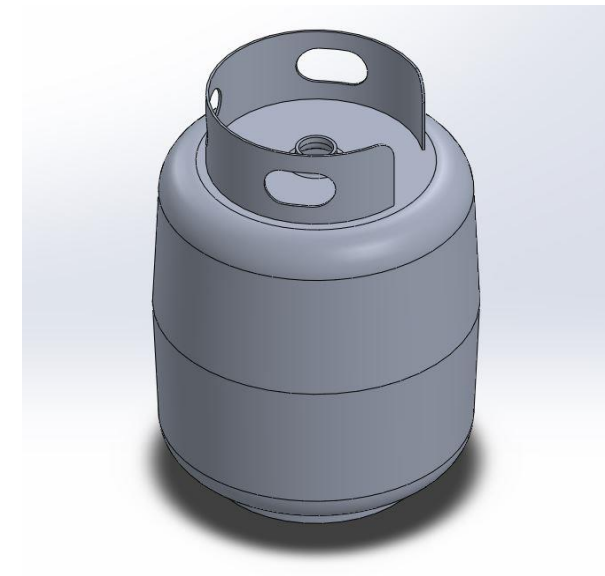
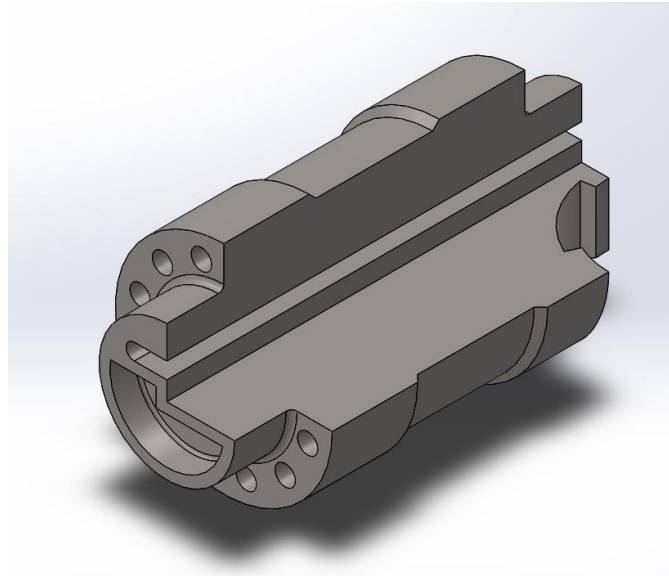
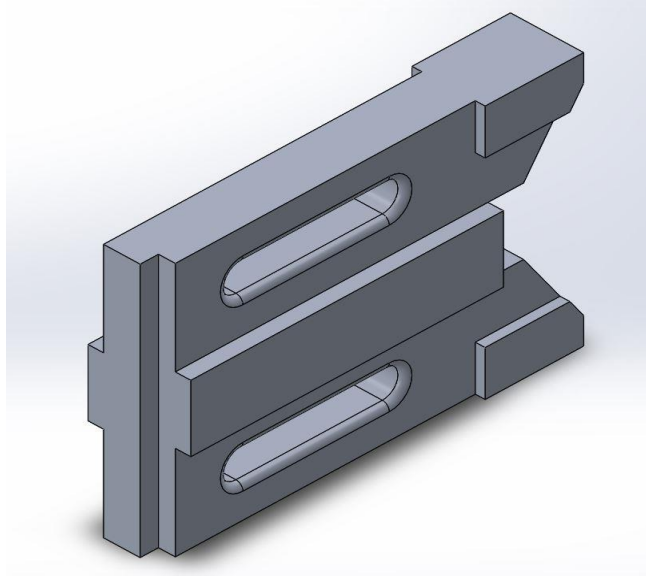
I combine seven years of CAD modeling experience with a deep understanding of the software, mechatronics, and engineering theory required in successful mechanical design. These skills have been honed through industry experience and academic coursework to allow me to not only create a functional design, but also to understand the critical nuances of the design that enable for its integration into our modern world.

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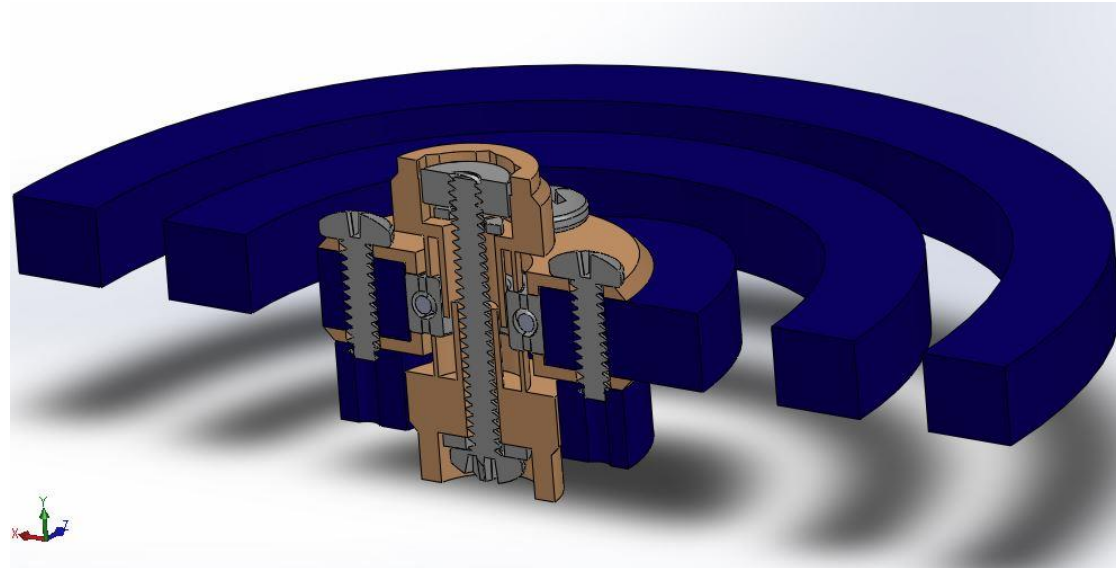
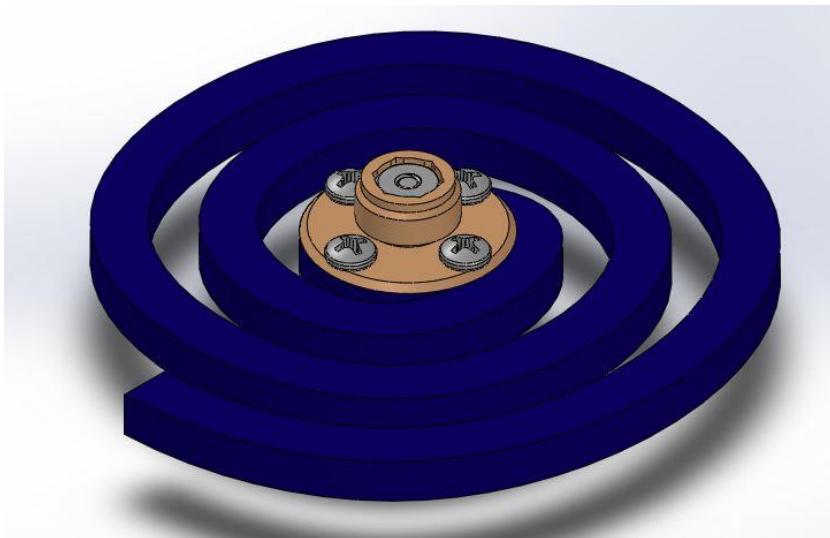
SolidWorks Certification Exam

I developed these models as solutions to problems on the SolidWorks Certification Exam. All three were based on a set of fully-dimensioned drawings provided through the exam and were made as individual parts, not to be incorporated into assemblies.



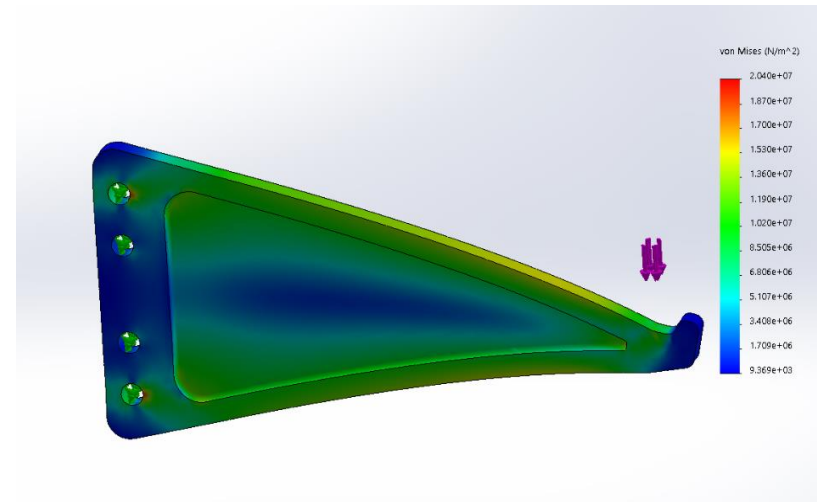
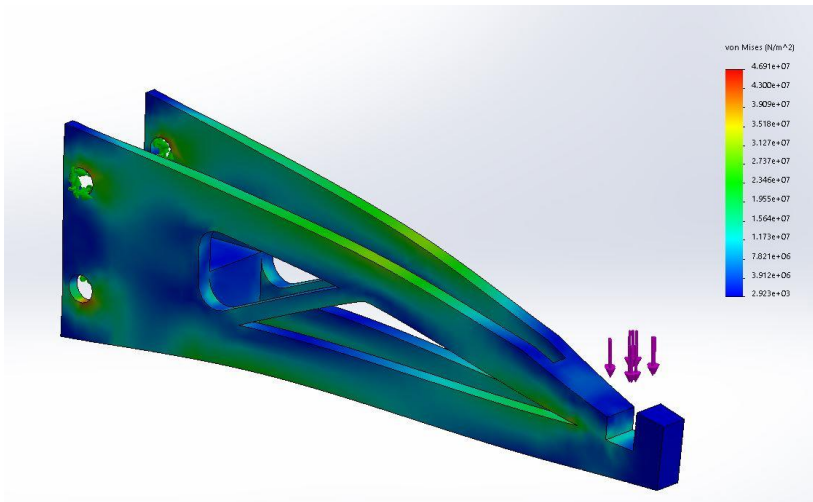
Spiral Fidget Spinner

I developed this assembly in 2019 as part of an assignment for my Machine Design course. Based on this assembly, the blue components were laser cut from 0.25" acrylic and the central clamping components (in orange) were 3D printed. General guidelines were provided regarding bolt and bearing choice, as well as manufacturing techniques, however the details of the design were custom to this model.



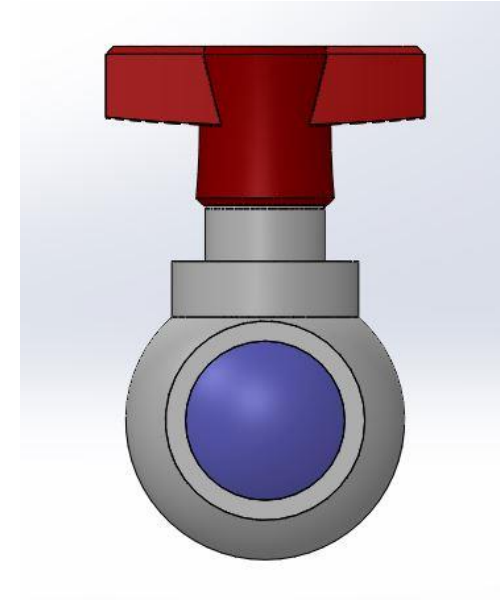
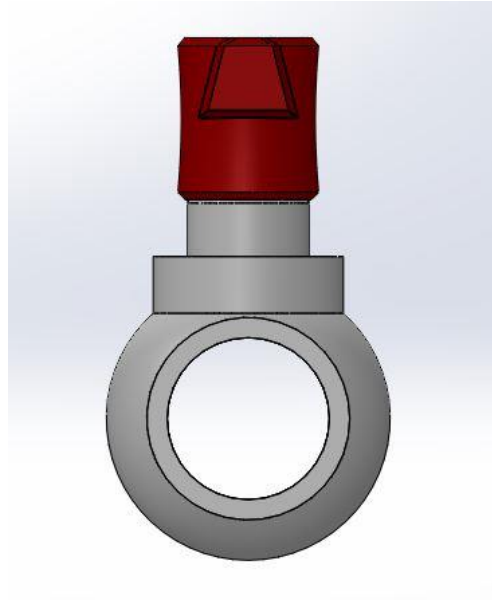
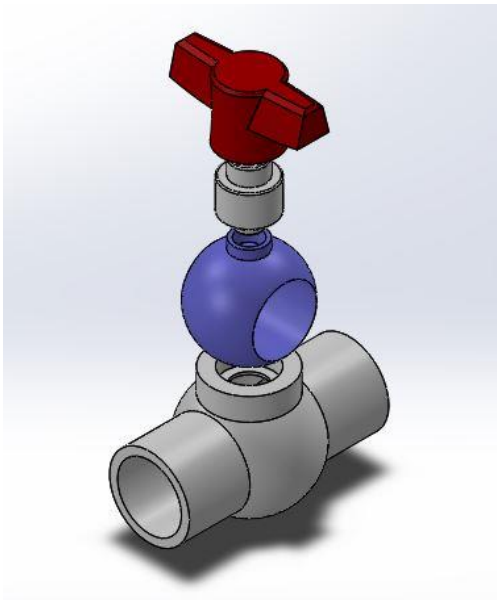
3D Printed Cantilever Beam

I developed this model in 2019 as part of an assignment for my Machine Design course to be 3D printed from ABS plastic with the goal to hold as much weight as possible within a 2 cu. in. volume limit. SolidWorks FEA simulations were conducted on each model to estimate the load bearing capacity, deformation, and potential fracture points. The design on the left was an early model for the beam, while the design on the right was the final model used by my group.



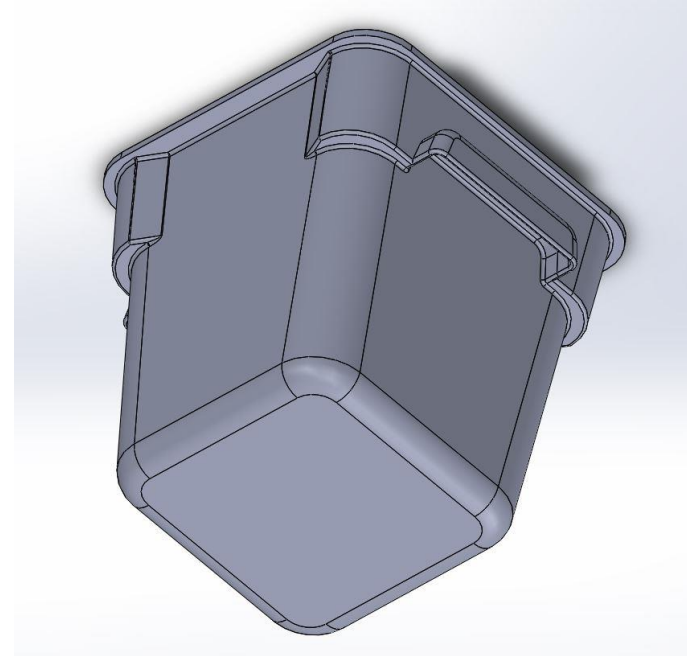
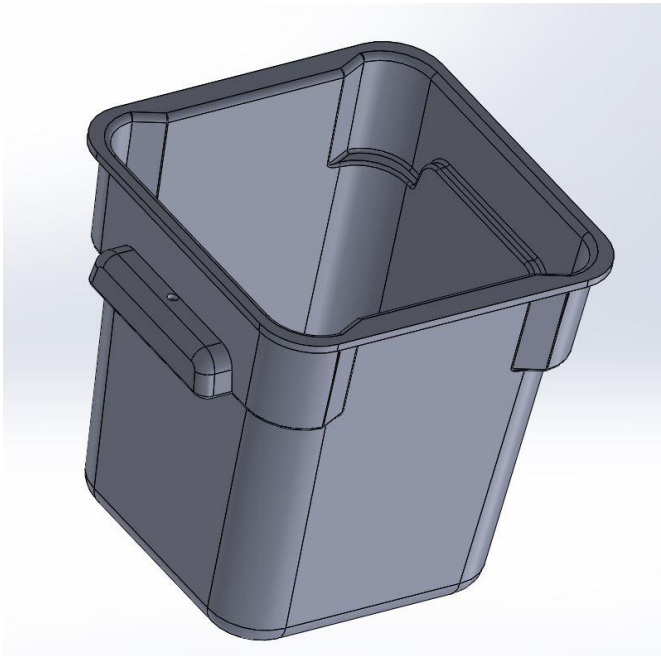
Ball Valve

I developed this model in 2020 as an exploration into press fit tolerancing and gap tolerancing. All joints are intended to be press fit. The gap between the ball and the pipe meets clearance fit parameters. This clearance fit does not impede proper flow or stoppage across the valve.



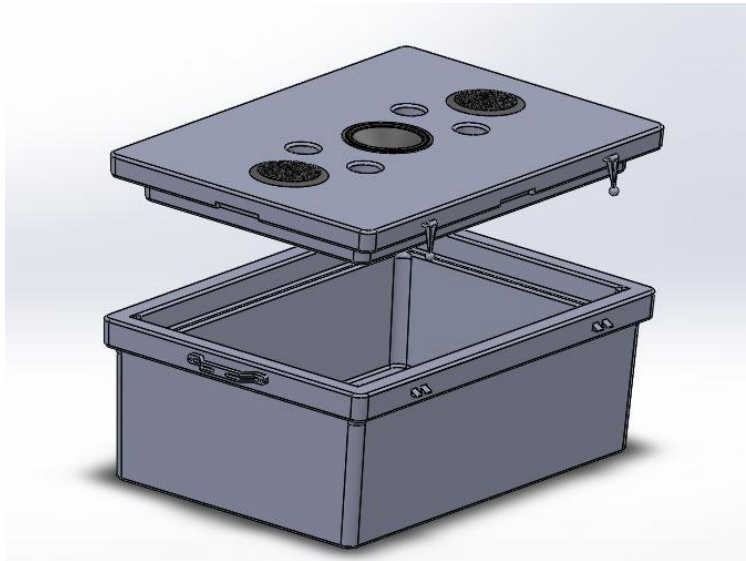
4 qt. Square Food Storage Container

This model was part of a reverse-engineering skills assessment. I took all dimensions by hand from the physical model. This model provides an example of process and design for injection molded parts.



Cooler with Onboard Speaker

This model is an original design for an injection molded cooler. As such, all cooler elements are lofted for manufacturability. The model features four elastic latches similar to those found on other modern coolers.



6-pack Can Holder

I developed this design in 2020 by reverse engineering the product based on the physical model as an exploration into injection molding techniques. All dimensions were taken by hand.

